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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,696	06/27/2003	Gerhard Beckmann	107044-0036	7715

24267 7590 03/16/2007  
CESARI AND MCKENNA, LLP  
88 BLACK FALCON AVENUE  
BOSTON, MA 02210

EXAMINER
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CHUO, TONY SHENG HSIANG

ART UNIT	PAPER NUMBER
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1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/16/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/607,696	Applicant(s) BECKMANN ET AL.	
	Examiner Tony Chuo	Art Unit 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 February 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,7-10 and 27-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,7-10 and 27-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/12/07 has been entered.

### ***Response to Amendment***

2. Claims 1, 7-10, and 27-30 are currently pending. New claims 27-30 have been added. Claims 2-6 and 11-26 are cancelled. Claims 1 and 7-10 do overcome the previously stated 103 rejections. However, upon further consideration, claims 1, 7-10, and 27-30 are rejected under the following new 102 and 103 rejections.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 7, 8, and 27-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanizaki et al (JP 04-274174).

The Tanizaki reference discloses a direct methanol fuel cell comprising: an anode chamber, a cathode chamber, and a fluid controlling assembly comprising a collector plate "10" that includes through-holes "8" disposed in a cathode chamber and a corresponding shutter plate "7" that includes through-holes "6" wherein the placement of the collector plate relative to the shutter plate results in an opening that permits the flow of fluids therethrough, and when closed restricts the flow of fluids into the cathode chamber wherein the collector plate and shutter plate are planar components that include corresponding through-holes which when aligned create openings and can be adjusted relative to one another to control the rate of fluid flow through the through-holes (See Abstract).

Examiner's note: It is well known in the art that the humidified air, which is a mixture of water and air, is fed to the cathode chamber of the fuel cell. Therefore, it is inherent that the fluid controlling assembly regulates the hydration of the catalyzed membrane such that the membrane remains properly hydrated.

5. Claims 1, 7, 10, 27, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Horiguchi et al (US 2002/0025460).

The Horiguchi reference discloses a fuel cell power generating apparatus comprising a water injection nozzle "41" that is mounted on the air intake manifold "14" that regulates the rate at which water travels into and out of the air intake manifold of the fuel cell wherein the nozzle comprises a first component that includes an aperture disposed in the air intake manifold and a corresponding second component such that placement of the first component relative to the second component results in an

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opening that permits the flow of water therethrough, and when closed restricts the flow of water into the air intake manifold to regulate the hydration of the electrolyte membrane (See paragraph [0040] and Figure 1). It also discloses a control unit "70" for variably actuating the position of at least one of the first and second components of the water injection nozzle (See paragraph [0052]). Examiner's note: The air intake manifold is construed as the cathode chamber of the fuel cell.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanizaki et al (JP 04-274174) in view of Reynolds et al (US 5985475). The Tanizaki reference is applied to claim 1, 7, and 8 for reasons stated above. However, Tanizaki et al does not expressly teach first and second components lined with a gas permeable, liquid impermeable film that controls the rate of flow of oxygen therethrough to control the cathode reactions, yet restricts the flow of liquid water therethrough such that humidity is maintained within the cathode chamber. The Reynolds reference discloses a gas permeable, liquid impermeable membrane that controls the flow rate of oxygen into the cathode (See column 5, lines 28-34). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Tanizaki fuel

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cell to include first and second components that are lined with a gas permeable, liquid impermeable membrane that controls the rate of flow of oxygen therethrough to control the cathode reactions, yet restricts the flow of liquid water therethrough in order to increase the efficiency of the fuel cell by maintaining the proper humidity within the fuel cell.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanizaki et al (JP 04-274174) in view of Bruckner (US 2002/0016684). The Tanizaki reference is applied to claim 1 and 7 for reasons stated above. However, Tanizaki et al does not expressly teach a control system for variably actuating the position of at least one of the first and second components of the fluid controlling assembly. The Bruckner reference discloses a control unit "14" that regulates the mass flow rate of air that is fed to the fuel cell stack (See paragraph [0044]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Tanizaki fuel cell to include a control system for variably actuating the position of at least one of the first and second components of the fluid controlling assembly in order to regulate the power output of the fuel cell based on the quantity of process gas supplied to the fuel cell.

### ***Response to Arguments***

9. Applicant's arguments with respect to claims 1 and 7-10 have been considered but are moot in view of the new ground(s) of rejection.

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**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Chuo whose telephone number is (571) 272-0717. The examiner can normally be reached on M-F, 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC

  
**JONATHAN CREPEAU**  
**PRIMARY EXAMINER**